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ABSTRACT

To understand the origins of demonstrated tracking deficits possessed by parents of problem children, a study examined in detail possible differences between a sample of parents with behavior-problem children and a sample of parents with "normal" children. Subjects were 48 mothers who had children between the ages of 4 and 10. While viewing a segment of videotape depicting behavioral interactions within a family, mothers of both categories of children indicated the onset of prosocial and aversive behavior in a targeted child. Accuracy of behavioral tracking was assessed by comparing mothers' responses with those of professional observers employing a reliable behavior-coding system. The same coding system was used to collect behavioral observations of actual parent/child interactions. A parental self-report measure was also employed to assess the daily occurrence or nonoccurrence of problematic behavior. It was found that mothers of aggressive children indicated a significantly greater frequency of aversive behavior on the identical behavioral tracking task than did mothers of "normal" children. Multiple regression analyses indicated that responses to the analog behavioral tracking task explained a significant amount of variance in both the actual rate of aggressive child behavior in the home and in parental response to that aggressive behavior. (Author/RH)

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MATERNAL TRACKING OF CHILDHOOD BEHAVIORS AS MEDIATED BY FAMILY STRESS

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MATERNAL TRACKING OF CHILDHOOD BEHAVIORS

AS MEDIATED BY FAMILY STRESS

ABSTRACT

While viewing a segment of videotape depicting the behavioral interactions of a family, mothers of both behavior problem and non-problematic children indicated the onset of prosocial and aversive behavior of a targeted child. Accuracy of behavioral tracking was compared to professional observers employing a reliable behavior coding system. The same coding system was used to collect in vivo behavioral observations of parent-child interactions. A parental self-report measure was also employed to assess the daily occurrence or non-occurrence of problematic child behavior. It was found that mothers of aggressive children indicated a significantly greater frequency of aversive behavior on the identical behavioral tracking task than did the mothers of "normal" children. Multiple regression analyses indicated that responses to the analog behavioral tracking task explained a significant amount of variance in both the actual rate of aggressive child behavior in the home and in parental response to that aggressive behavior.

INTRODUCTION

In most approaches to psychotherapy, the client is asked to describe some aspect of the background, circumstances, or conditions relating to the problem for which they have sought treatment. Irrespective of the therapist's orientation, s/he is dependent upon some portion of this self-report information for the establishment and implementation of a "treatment plan." One of the problems inherent in this type of clinical feedback loop concerns the accuracy with which individuals are capable of tracking various aspects of their environment.

Behavioral therapies designed to help parents deal with the problematic behaviors of their children are particularly susceptible to deficits in parental tracking ability. These therapies typically instruct parents to punish problem behavior and reward desirable behaviors. Yet, these tasks are highly dependent upon the parents' ability to accurately detect the occurrence of specific behaviors and immediately provide consequences for their occurrence.

A number of studies have examined the parents' ability to track child behaviors. Walter and Gilmore (1973) placed families in a placebo treatment program for the abatement of problem child behaviors. Parents reported improvement in their children's behavior when objective measures indicated that no improvement had taken place. Lobitz and Johnson (1975) compared parental ratings of the magnitude of behavior change to observational data. Samples of parents having children with and without behavioral problems were included. The results indicated that both groups of parents were inaccurate in their estimation of change, with parents of out-of-control children being less accurate. Peine (1970)

reported that mothers of problem children underestimated the occurrence of problematic behavior by their children by as much as 700%.

Lorber, Reid, and Simard (1979) exposed male and female college students (who as yet had no children) to a high level of either aversive behavior or prosocial behavior via a videotape presentation. Following this exposure, subjects were shown an identical segment of videotape for which they were instructed to quantify the ongoing behavioral sequence, and also to label the observed behaviors as being either prosocial or aversive. The authors found that subjects exposed to prosocial behavior demonstrated a higher accuracy for detecting the onset of child behaviors than did subjects faced with high levels of deviant behavior. As well, a significant sex by condition interaction for the frequency of tracking prosocial behavior was obtained. This finding demonstrated that, when faced with high-level aversive behaviors, the females' ability to track prosocial behavior was greatly depressed. Conversely, when exposed to prosocial behavior, females performed superior to male subjects. The decrement in female tracking ability as a function of exposure to high-level deviant child behavior was demonstrated in an 89% reduction of tracking prosocial behaviors over the length of the videotape presentation. It appeared from this study that exposure to high levels of aversive behaviors, especially for females, tends to have an extreme detrimental effect upon their tracking of child behavior.

It is possible to hypothesize a multitude of factors that may be relevant to understanding the origins of the demonstrated tracking deficits of parents of problem children. The present study was an attempt to examine in greater detail possible differences between a

sample of parents with behavior problem children and a sample of parents with "normal" children.

METHODS

Subjects

Subjects for the present study were 48 mothers who had children between the ages of four and 10 years. Twenty-four of these mothers were recruited via an advertisement in the local newspaper. They were screened to determine whether they had "normal" children.[1] The second sample of 24 mothers was collected from referrals from the Oregon Social Learning center (OSLC). This group was selected on the basis of having children with high-rate behavior problems.[2]

The two samples of parents were matched for sex of their child, the age of the child, number of siblings, and presence or absence of spouse (see Appendix A). Subjects in the non-problem sample were paid for their participation in the study. The behavior problem sample underwent the assessment procedure as a prerequisite for their entry into treatment at the OSLC, and thus were not paid.

Stimulus Materials

All subjects viewed an eight-minute, 53-second segment of a videotape edited from videotapes of a family treated at the OSLC. The family presented on the videotape included a four-year-old boy (the "target" subject), an infant girl, and their mother and father. This tape was comprised of scenes which depicted both positive and negative behaviors displayed by the "target" subject during a wide range of activities within their home. Using the Oregon Social Learning Center Control Coding System (Moore, Forgatch, Mukai & Toobert, 1979), this segment of

tape was coded by two observers[3] to establish the content of the behaviors displayed by the target child. The rate-per-minute of antisocial behavior in the stimulus tape was 2.85.

A practice segment of videotape, consisting of three-minutes, 10 1/2-seconds was edited from a series of family scenes portrayed by actors. This scene contained only "normal" family interaction patterns and was used to familiarize subjects with the apparatus.

Apparatus[4]

Subjects were seated facing a videotape monitor, with the response box placed directly in front of them. The response box contained two buttons: a "good" button and a "bad" button. The recording apparatus sampled the subject's button-pushing behavior and recorded the status of the buttons each 1/2 second. By comparing the subject's responses to those behaviors recorded by the professional observers, it was possible to assess the accuracy of the subject's tracking of the target child's behavior.

Measures

1. Maternal tracking measures

Each of the following tracking variables was obtained by comparing an individual subject's responses to the videotaped segment of the tracking task to the responses coded by highly trained observers.

a. Frequency of accurately tracked behavior. Surrounding each of the observer identified target child behaviors, an interval was established such that if a subject indicated the onset of a behavior within that interval the subject was credited with an

accurately tracked behavior. For the present study, an interval of one second prior to and two seconds following each code item was employed.

b. The percentage of accurately tracked prosocial and antisocial behavior. These variables were defined as the accurate indication of the onset of either a prosocial or antisocial behavior. If a subject indicated the onset of a "bad" behavior within the above interval surrounding an antisocial behavior[5] an "accurately tracked antisocial behavior" was scored. If the subject pressed the "good" button within the interval surrounding a "prosocial" behavior, an "accurately tracked prosocial behavior" was scored.

c. Mean aversiveness level of accurately tracked antisocial or prosocial behaviors. Again employing the rating scales described in Footnote 5, the average aversiveness level of each subject's accurately tracked "prosocial" or "deviant" behaviors was computed.

d. Lag time for intrusions. An antisocial intrusion was defined as a subject's indicating the onset of an antisocial behavior, at a time when the trained observers recorded no behavior by the target child. When this occurred, the number of seconds between this intrusion and the previous undetected antisocial behavior was calculated and then averaged for each subject's deviant intrusions. The same procedure was employed for prosocial intrusions.

e. Accurately tracked behavioral onset correlated for subjects rate of tracking. This variable was computed by taking the frequency of each subject's "good" or "bad" button presses and calculating the percentage of accurately tracked prosocial or antisocial behaviors.

2. Parent Daily Report (PDR)

Parent Daily Report (Jones, Reid & Patterson, 1976; Chamberlain, 1980) was developed in order to obtain, via telephone interview, parental self-reports of the daily occurrence of specific child behavior problems (see Appendix B). Parents were asked to indicate which of the 31 behaviors they felt were problematic for their child. They were then called daily for two weeks and asked to report the occurrence or non-occurrence, in the last 24 hours, of the child behavior problems that they had targeted.

3. Family Interaction Coding System (FICS)

The Family Interaction Coding System (Patterson, Ray, Shaw, & Cobb, 1969; Reid, 1978) is an in vivo behavioral coding system which allows the sequential recording of a targeted person's behavior and the reactions of the other family members in terms of 29 code categories. Within each observation session, each family member is designated as the "target subject" and the interactions between that individual and all other family members are coded for two nonconsecutive five-minute intervals. A set of Rules was given to each family to provide a standardized observational setting (see Appendix C). Three in-home observation sessions were conducted concurrent with PDR telephone calls.

Two variables were extracted from the in-home observational data to assess the patterns of interaction between mothers and their children. The first of these variables, labeled "maternal reinforcement of aggressive child behavior" was defined as: the probability that a mother will emit a prosocial behavior given that

her child has displayed one of the 14 aversive behaviors in the coding system in the immediately preceding code interval. The second variable, "maternal punishment of prosocial child behavior" was defined as: the probability that a child will receive an aversive response by his or her mother given that the child has emitted a prosocial behavior. Also derived was the child's total aversive behavior score (TAB) which is defined as the rate-per-minute of the child's emission of the 14 aversive behaviors recorded by the behavioral coding system.

PROCEDURE

Subjects were run individually. They were seated at a table containing the response box of the behavioral tracking apparatus and faced in the direction of a videotape monitor. The room in which the subjects were placed was neither soundproof nor environmentally controlled in any way. Each subject was given the following instructions:

> The Oregon Social Learning Center has been studying families for the past 10 years, and today we are interested in studying children in particular. What you will be doing involves something which we call meaningful units of behavior.' That is a technical term which means nothing more than each time you see a child do something new or different; for example, I could show you a videotape of a child sitting in a chair, getting up, going to a door, closing it, going back, and sitting down again. You might think each one of these things--getting up, closing the door, sitting down--is a new and different behavior, or you might think that the whole sequence could be closing the door behavior,' and think of it as just one new or different behavior. There is no right or wrong way of deciding when a new behavior begins. What we are interested in is how you, and other parents decide what is a new or different behavior. Do you have any questions thus far? [All questions were answered at this point.]

On the box in front of you are two buttons, one labeled 'good,' the other labeled 'bad.' Each time you see the child on the videotape do a new or different behavior which is 'good' or 'appropriate,' in your opinion, press the good' button down for about a second [E demonstrates], and then let the button up. If you see a new or different behavior that is 'bad,' or 'inappropriate,' press the bad' button down for a second [E demonstrates], and then let it up again. Many parents ask, 'How do I deal with a "neutral" behavior?' My response to that question is that there is really no such thing as a neutral behavior. That is, all behaviors have some components which are 'good' and some components which are 'bad.' It is your job to decide whether the particular behavior is more good than bad or more bad than good and then press the button corresponding to your decision. Therefore, you will press one of the two buttons each time you see a new or different behavior. Do you have any questions at this point? [E answered all questions.]

I am aware that this button-pushing task is probably new and quite different from anything you have dome previously. For that reason, before I show you the tape of the real family, I have a two-minute practice segment on the videotape recorder now, for which I would like you to do the button-pressing task just as I have described. When you are finished with that, I will come back and answer any questions that you might have regarding how to do the task. This practice tape is not a real family; it's a group of actors. What I want you to do is to watch a particular child [E instructed the subject which child to watch] and, once again, each time you see a new or different behavior which is 'good' or 'appropriate,' in your opinion, press the 'good' button down for a second and then let it up. If another 'good' or appropriate' behavior occurs, then press the button down again. If you see a new or different behavior that is 'bad' or 'inappropriate,' then press the 'bad' button down, hold it for a second, and then let it go. Do you have any questions before I put on the practice segment of tape? [E answered any questions that the subject might have had.]

To familiarize subjects with the apparatus, they were presented with the practice segment of videotape. Provided that a criterion of the use of both buttons (good and bad) was employed by the subject and that at least one button was pressed during each one-minute interval, subjects then proceeded. If this criterion was not met the E returned and reinstructed the subject on the task. Then the practice segment of the tape was once again presented until the criterion for proceeding

was met. Once this criterion was reached, the E returned and gave the following instructions:

> On the tape that you see now, there are two children--a young boy and a baby girl. The child that I want you to watch in this tape is the young boy. You are to do the same button-pushing task for this boy that you just did for the boy on the practice segment.

The E once again reviewed the following instructions:

> Each time you see a new or different behavior which is 'good' or 'appropriate,' in your opinion, press the good' button for a second; and each time you see a new or different behavior which is 'bad' or inappropirate,' press the bad' button down and hold it for a second. Do you have any further questions? [E answered all questions.]

The trial segment of the tape was then presented to the subjects and their button-pushing responses were recorded.

RESULTS

An examination of the *in vivo* observational data was undertaken to determine if the clinic-referred and non-referred samples displayed different patterns of familial interaction. The Total Aversive Behavior (TAB) score, expressed as the rate per minute of the 14 aversive behaviors of the Family Interaction Coding System, indicated that children referred for treatment of aggressive behavior emitted significantly higher rates of antisocial behavior as measured by the coding system ($F = 37.63$; $df = 1/44$; $p < .000$) than did non-referred children. In an examination of mother/child interaction, it was found that mothers of aggressive children reinforced significantly more of their child's aggressive behavior than did mothers of non-aggressive children ($F = 7.77$; $df = 1/44$; $p < .008$). No differences were found between the two samples for the maternal punishment of prosocial behavior ($F = 0.18$; $df = 1/44$; $p < .18$).

The Parent Daily Report measure differentiated the samples in terms of maternal self-report of aversive child behavior. Mothers of aggressive children initially targeted significantly more behaviors as problematic for their children than did mothers of "normal" children ($F = 10.44$; $df = 1/44$; $p < .002$). Mothers of aggressive children also reported a significantly higher daily rate of these targeted aversive behaviors ($F = 7.91$; $df = 1/44$; $p < .007$). However, to control for the initial number of behaviors targeted, the percentage of daily occurrence of targeted behaviors was also computed. This analysis found no differences between the aggressive and non-aggressive samples ($F = 0.77$; $df = 1/44$; $p < .387$).

An examination of the data from the analog behavioral tracking measure found that while viewing the identical segment of videotape, mothers of aggressive children indicated that the stimulus child emitted a significantly greater number of antisocial behaviors ($F = 12.00$; $df = 1/44$; $p < .001$). No differences were obtained between mothers' tracking of prosocial behavior ($F = 1.26$; $df = 1/44$; $p < .267$). However, when mothers did accurately indicate the onset of a prosocial behavior (i.e., agreed in time with the trained behavioral observers), mothers of aggressive children waited for behaviors that had independently been rated as more socially acceptable before deciding to label them as prosocial ($F = 8.23$; $df = 1/42$; $p < .006$).

Further analyses were undertaken to examine the interrelationship between the three modalities of behavior tracking. A correlational analysis was employed to examine the relationship between the *in vivo* observation variables and maternal self-report of aversive child behavior.

A significant positive relationship was found between the child's overall rate of aversive behavior, as measured by the observational coding system, and the mean daily rate of maternal self-report of aggressive behavior ($\underline{r}$ = 0.466; $\underline{n}$ = 48; $\underline{p}$ < .001). The rate of deviant child behavior as measured by the observation system was shown to be positively related to maternal reinforcement of aggressive child behavior ($\underline{r}$ = 0.282; $\underline{n}$ = 48; $\underline{p}$ < .192).

The relationship between the analog behavioral tracking task and actual in-home behavior was assessed for the clinic referred sample to examine the utility of employing the tracking task within a clinical setting. A maximum $\underline{R}^2$ multiple regression analysis was performed using the rate of deviant child behavior and maternal punishment of prosocial behavior as dependent variables. Treating the major summary scores from the tracking task as independent variables, a multiple correlation of .802 ($\underline{R}^2$ = 642)(see Appendix D) was obtained for the rate of deviant child behavior. Application of a shrinkage formula employed to estimate the population multiple correlation (Carter, 1979) reduced the obtained value to .733 ($\underline{R}^2$ = 537). For maternal reinforcement of deviant behavior, the obtained multiple $\underline{R}$ was 845 ($\underline{R}^2$ = 715)(see Appendix E) and the estimated cross-validated multiple $\underline{R}$ was .794 ($\underline{R}^2$ = .631). The obtained $\underline{R}$ for maternal punishment of prosocial child behavior was .818 ($\underline{R}^2$ = .669)(see Appendix F). The estimated cross-validated multiple $\underline{R}$ for this analysis was .739 ($\underline{R}^2$ = .546). Thus, maternal response to the behavioral tracking task appears to be predicitve not only of the rate at which their children emit aversive behaviors, but also of the style in which parents respond to those behaviors.

DISCUSSION

The results of the present study describe numerous differences in the behavioral tracking styles employed by mothers of aggressive behavior-problem children and mothers of non-problem children. In addition to these findings, the present study also obtained results relevant to earlier literature describing behavioral patterns of family aggression. Numerous studies (e.g., Lobitz & Johnson, 1975; Patterson, 1976) have found significant differences in the rate of aversive behavior emitted by aggressive, clinic-referred children, as compared to nonaggressive children. Data from the present study were consistent with these results, and revealed that on the average, a nearly nine-fold difference in the rate of aversive behavior was displayed by the two samples. Aggressive children emitted an average of .97 aggressive behaviors per minute (or about one aggressive act every minute), whereas children in the nonclinic-referred sample displayed an average of .11 aggressive behaviors per minute (or about one every 10 minutes).

Patterson (e.g., 1976, 1981) proposed a theory which presents the aggressive child as just one member of a coercive family system which helps to maintain the aggressive behavior of the problem child as well as those of other family members. Numerous studies have described aspects of family interaction that help to perpetuate painful social exchanges between family members. The present study further supports Patterson's theory and replicates the research of others (e.g., Herbert & Baer, 1972; Sallows, 1973; Wahler, 1968) by demonstrating that mothers of aggressive children are active participants in a coercive family process. This is clearly demonstrated by the finding that mothers of

out of control children reinforce their child's aggressive behavior significantly more often than mothers of nonclinic-referred children. In fact, in the present study, mothers of aggressive children reinforced an average of 68% of their children's aversive behavior, as compared to 36% for mothers of nonaggressive children. The findings that the coercive family process is further maintained by maternal punishment of socially acceptable child behavior (e.g., Lobitz & Johnson, 1975; Patterson, 1976) was not supported by the present study.

Parent self-report of childhood behavior indicated that mothers of aggressive children, on the average, targeted nearly twice as many behaviors from the Parent Daily Report as problematic than did mothers of nonaggressive children. They also reported a significantly higher daily rate of aversive child behavior than did mothers of nonaggressive children. However, since mothers were only asked to indicate the occurrence of non-occurrence of targeted problem behaviors, mothers in the aggressive sample had a larger sample pool of behaviors to choose from. When the daily rate of occurrence of aversive behavior was corrected for the initial frequency of targeted behaviors, the above difference between the clinical and nonclinical samples was eliminated. Thus, although mothers from the two samples initially reported a significantly different number of behaviors as problematic, on the average, mothers from both samples reported that only about one third of their children's problem behavior occurred on a daily basis.

The results of the present study yield a number of findings that shed a different light on the process of maternal tracking of ongoing child behavior than did earlier research. In accord with the work of

Peine (1970), mothers in the present study did underestimate the actual frequency of the aversive behavior that they were viewing. On the average, mothers of the nonclinic-referred children underestimated the frequency of aversive behavior by approximately 230% as compared to an average of 93% underestimation by the mothers of aggressive children. Put another way, the mothers of the out-of-control children indicated a significantly higher frequency of aversive behavior by the target child than did mothers of nonproblematic children. An earlier study by Lorber (1978) found that when women who as yet had no children were exposed to aversive child behavior, the result was a marked reduction in their tracking of antisocial actions. Lorber hypothesized that this reduction in their tracking of aversive behavior may serve to reduce the uncertainty of the chaotic environment that they were exposed to. The above finding that mothers who, in fact, have aggressive children indicate a greater frequency of aversive behavior than the non-clinic referred mothers for the identical behavior sequence, appears relevant to this hypothesis. This finding, as well, is not inconsistent with the subjective report of therapists, who often state how negative these mothers are in describing their children and how difficult it is for them to redirect their attention to positive aspects of their interactions with their children.

The marked reduction in the tracking of prosocial behavior displayed by Lorber's (1978) inexperienced female subjects was not supported in the present study. Maternal accuracy for the detection of prosocial and deviant child behavior did not vary as a function of sample membership. However, although the actual frequency of accurately tracked prosocial behavior did not differ, the specific type of behaviors tracked did.

The mothers of out-of-control children tended to wait for behavior by the target child that had been independently rated as more prosocial before labeling it as such. An examination of individual subject protocols indicated, for example, that mothers of aggressive children accurately indicated the onset of behaviors such as approval or volunteering (rated as highly desirable). The non-clinic referred mothers, although tracking a similar number of behaviors as the referred sample, also tracked more moderately rated behaviors such as work and compliance. Future studies will be necessary to systematically evaluate what appears to be qualitative differences in the styles that mothers employ when they decide whether a specific behavior is either prosocial or deviant.

Findings from the correlational analyses indicated that there was a significant positive relationship between the observed rate of aversive child behavior in the home and mother self-report of the daily occurrence of aversive behavior. This finding is in accord with numerous earlier studies that provide data for the clinical utility of the Parent Daily Report measure (e.g., Chamberlain, 1980; Christensen, 1976; Fleischman, 1976). Thus, for those clinical settings which desire ongoing data collection but cannot afford the expense of maintaining trained behavioral observers (which refers to most settings), the present study supports the contention that the use of the Parent Daily Report measure may be a useful and less costly alternative.

A significant but low order positive correlation was obtained between the child's Total Aversive Behavior (TAB) score and maternal reinforcement of child aggression. This finding provides further support for Patterson's coercion theory. As stated earlier, Patterson

(1981) proposed that families of aggressive children tend to actively maintain that aggression via coercive family interactions. The present study adds additional support for this contention by demonstrating that mothers of aggressive children may actually maintain their children's aversive behavior by reinforcing its occurrence. This finding is extremely useful clinically when therapists are attempting to intervene in a coercive family system. Not only will mothers need to be taught to punish deviant behavior and to reinforce its prosocial counterpart, but they may, in addition, need to "unlearn" old parenting style habits.

The multiple regression analyses showed that variables derived from the behavioral tracking task accounted for a significant amount of variance, not only in the observed rate of a child's deviant behavior, but also in maternal reaction to that behavior. Four variables from the analog tracking task (i.e., the frequency of prosocial behaviors tracked, the deviant behaviors by the stimulus child labeled by mothers as prosocial, the total accuracy of behaviors tracked, and the percentage of behaviors tracked that were labeled as prosocial) were shown, even after correction for shrinkage to account for nearly 54% of the variance in the child's Total Aversive Behavior score. This compares quite favorably to 13% of the variance in the rate of aversive child behavior accounted for by the maternal self-report measure alone. Thus, variables derived from the analog behavioral tracking task may prove quite useful in helping to predict actual rates of child behavior when the luxury of _in vivo_ behavioral observations may not be possible.

The two remaining multiple regression analyses employed maternal reaction to child behavior as the dependent variables. In these analyses,

six of the tracking variables accounted for 63% (after being corrected for shrinkage) of the variance in the percent of maternal reinforcement of deviant child behavior and 55% (corrected for shrinkage) of maternal punishment of prosocial child behavior. These findings may prove to be two of the most important results of the present study if they sustain the test of cross-validation and replication. If maternal tracking styles can be reliably shown to relate to the way in which adults interact with their children, then a new component may need to be included in parent training paradigms for the treatment of aggressive child behavior. Although some treatment programs for out-of-control child behavior (e.g., Patterson & Reid, 1973) do include parental tracking components, these tend to go only as far as having parents learn the mechanics of how to record the frequency of a set of specified child behaviors. Given that these results are only suggestive, one may only hypothesize that future treatment programs may include a component that teaches parents not only how to track child behavior, but, based on detailed analyses of how parents of "normal" children monitor their environment, specific tracking strategies may be taught that will help to change the way in which parents perceive their interactions with their children.

FOOTNOTES

[1]Familes in the nonproblem sample were gathered using the following advertisement placed in the local Eugene and Springfield newspapers:

> Families with a child between the age of four and 10 years wanted to participate in a four-week research study. Must have telephone. Participants will be paid. Call Patti at 485-2711.

Upon receiving a call from interested parents, the study was explained. The only additional criterion for selection to this group was that parents had not sought professional help with child behavior problems in the past year. Upon agreement of the parents, a consent form was sent for their examination and signature.

[2]Families in the distressed sample were selected from the referral population of the Oregon Social Learning Center. Their assignment within the Center (e.g., treated or control sample) had no bearing on their selection for the present study.

[3]Observers trained in the Oregon Social Learning Center Stimulus Control Code (Moore, Forgatch, Mukai, & Toobert, 1979) simultaneously viewed the stimulus videotape. As the tape proceeded, they discussed the points of behavioral onset and the appropriate code item for each behavior. The tape was repeated as many times as necessary until both observers agreed upon the behavioral content. Once this occurred, one observer was chosen to employ the tracking apparatus while the other coded in the usual fashion. Each time that it was appropriate to code a behavior, the observer at the apparatus pushed one of the tracking buttons to indicate the behavior onset. By matching every behavior with the appropriate character on the tracking protocol, a master reference list was created.

[4]A complete schematic diagram of the perceptual tracking apparatus may be obtained from the first author.

[5]In an earlier analysis, Lorber (1977) had 99 college undergraduates (23 males and 76 females) rate the aversiveness of each of the 29 code items of the Oregon Social Learning Center's Stimulus Control Coding System. An analysis of the aversiveness ratings by sex yielded a nonsignificant difference for this factor and, thus, the mean aversiveness ratings employed in the present study are an average of the entire sample's ratings.

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APPENDIX A

Demographic Data

	Sex of subject's referred child	Mean age of subject's referred child	Mean number of siblings	Mean % of spouse present
Normal Sample	12 male 12 female	6.18	1.06	82%
Problem Behavior Sample	12 male 12 female	6.14	1.50	71%

APPENDIX B

PARENT DAILY REPORT

Family Name _____ Date _____

Case # _____ Time of Call _____

Interviewer _____ Respondant _____

Phase _____

Behaviors	M	T	W	Th.	Fr.	Sa.	Su.
1. Aggressiveness							
2. Arguing							
3. Bedwitting							
4. Competitiveness							
5. Complaining							
6. Crying							
7. Defiance							
8. Destructiveness							
9. Fearfulness							
10. Fighting w/sibs							
11. Firesetting							
12. Hitting others							
13. Hyperactiveness							
14. Irritableness							
15. Lying							
16. Negativism							
17. Noisiness							
18. Noncomplying							
19. Not eating (meals)							
20. Pants wetting							
21. Pouting							
22. Running around							
23. Running away							
24. Sadness							
25. Soiling							
26. Stealing*							
27. Talking back							
28. Teasing							
29. Temper tantrum							
30. Whining							
31. Yelling							
32. Police contact							
33. School contact							
34. Parents hit							
35. Delinquent behavior**							
36. Other							
37. Other							

*Stealing

What?

Where?

When?

**Deliquent Behavior

Details:

APPENDIX C

Rules for Family Members During Home Observation Sessions

1. Everyone in the family must be present.
2. No guests.
3. The family is limited to two rooms.
4. The observers will wait only 10 minutes for all to be present in the two rooms.
5. Telephone: No calls out; briefly answer incoming calls.
6. No TV.
7. No talking to observers while they are coding.
8. Do not discuss anything with observers that relates to your problems or the procedures you are using to deal with them.

APPENDIX D

A Multiple Regression Analysis of the Rate of Aversive Child Behavior

	df	sum of squares	mean square	F	p
Regression	4	6.540	1.635	8.09	0.0000
Error	18	3.640	0.202		
Total	22	10.180			

	B value	Standard error	Type II sum of squares	F	p
Intercept	1.539				
Number of prosocial behaviors tracked[1]	.028	.015	.740	3.66	.072
Deviant behavior labeled prosocial[2]	.175	.75	1.118	5.53	.030
Total accuracy of behaviors tracked, corrected for frequncy of tracking[3]	6.130	1.324	4.336	21.44	.0002
Percentage of prosocial behaviors recorded[4]	5.959	1.276	4.414	21.82	.0002

[1]This is the total frequency of prosocial behaviors tracked by the mother.

[2]This is the frequency of deviant behaviors tracked by the mother that have been independently rated as prosocial.

[3]This is the percentage of accurately tracked behaviors given the frequency of behaviors tracked.

[4]This is given that a behavior was recorded, what percentages were prosocial.

APPENDIX E

A Multiple Regression Analysis of Maternal

Reinforcement of Childhood Aggression

	df	sum of squares	mean square	F	p
Regression	6	1.616	0.269	6.68	.001
Error	16	0.645	0.040		
Total	22	2.261			

	B value	Standard error	Type II sum of squares	F	p
Intercept	.588				
Number of deviant behaviors tracked[1]	.071	0.140	1.050	26.05	.0001
Total accuracy of behaviors tracked[2]	3.634	1.770	.170	4.21	.056
Accuracy of prosocial behaviors tracked[3]	.107	.031	.406	12.06	.003
Mean aversiveness of prosocial behaviors tracked[4]	-.314	.122	.270	6.70	.019
Accuracy of prosocial behaviors tracked, corrected for frequency of tracking	2.707	.544	.998	24.77	.0001
Percentage of deviant behaviors recorded[5]	2.734	.552	.998	24.52	.0001

[1]This is the total frequency of deviant behaviors tracked.

[2]This is the frequency of behavioral onset indicated by the mother that agrees, both in time and aversiveness, with trained behavioral observers.

[3]This is the frequency of prosocial behaviors that agree in time with trained behavioral observers.

[4]This is the mean aversiveness rating for each of the accurately tracked prosocial behaviors.

[5]This is given all behaviors recorded, what percentage were deviant.

APPENDIX F

A Multiple Regression Analysis of Maternal Punishment of Prosocial Child Behavior

	df	sum of squares	mean square	F	p
Regression	6	.218	.036	5.41	.003
Error	16	.107	.007		
Total	22	.326			

	B value	Standard error	Type II sum of squares	F	p
Intercept	-.168				
Number of prosocial behaviors tracked	.008	.003	.062	9.17	.008
Prosocial behaviors labeled deviant[1]	.050	.018	.060	8.97	.009
Inaccurate indication of aversive behavior[2]	.058	.017	.079	11.73	.004
Accuracy of prosocial behaviors tracked	-.678	.187	.088	13.73	.002
Percentage of prosocial behaviors recorded	1.655	.340	.159	23.65	.0002
Maternal rating of the aversiveness of the target child[3]	-.070	.019	.036	5.42	.033

[1]This is the frequency of prosocial behaviors tracked by the mother that have been independently rated as deviant.

[2]This is the frequency of tracked deviant behaviors for which the trained behavioral observers have said that no behavior has occurred.

[3]This is the mothers rating, on a nine point scale, of the aversiveness of the child that they were viewing.